

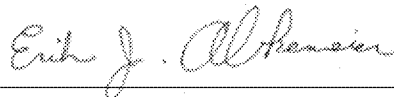
FINAL
HUNTERS POINT NAVAL SHIPYARD PROJECT
Standard Operating Procedure
GAMMA SCREENING OF TRUCKS
USING THE STATIONARY PORTAL MONITOR

HPO-Tt-021

DCN: ECSD-RAC-O5-1230

Revision 5

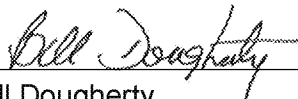
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12/3/13

Date



Bill Dougherty
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12/3/13

Date

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[NUMPAGES]**REVISION HISTORY**

<i>Revision (Date)</i>	<i>Rev. No</i>	<i>Prepared By</i>	<i>Description of Changes</i>	<i>Affected Pages</i>
May 26, 2005	0	Rick Garcia	Issued Final	All
August 1, 2005	1	Rick Garcia	Added requirements for truck to pause at beginning and end of a screening pass and clarified passage speed.	5-7
August 29, 2005	2	Rick Garcia	Added clarification on threshold level setting for portal monitor. Clarified steps to follow when truck fails to gain portal monitor clearance.	5, 7-9
March 9, 2006	3	Daryl DeLong	Added requirements for what needs to go through the portal monitor and appropriate responses for failure to gain portal monitor clearance.	All
September 22, 2011	4	Erik Abkemeier	Project Review	All
December 2, 2013	5	Erik Abkemeier	Clarification and typo correction	All

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[TOC \O "1-3" \T "HEADING 9,1,TITLE,1"]

Gamma Screening of Trucks Using the Stationary Portal Monitor

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for performing gamma radiation screening of heavy equipment and trucks loaded with soils and debris leaving and arriving at the Hunters Point Naval Shipyard (HPNS). The purpose of the portal scan is to protect against the inadvertent shipment of materials exhibiting elevated radiation levels and to radiologically release the heavy equipment and/or contents of the truck. The screening is conducted as required by Section 4.1.8 of the Base-wide Radiological Work Plan.

2.0 SCOPE

This procedure describes the appropriate methods for using the Ludlum Model 3500-1000RMW portal monitor to perform gamma radiation screening of trucks and materials leaving the HPNS site.

3.0 MAINTENANCE

The Radiation Safety Officer (RSO) is designated the procedure owner and is responsible for updating this procedure. Approval authority rests with the Project Manager.

4.0 RESPONSIBILITIES

Radiation Safety Officer – The RSO shall ensure that the personnel performing the work as called out in this procedure are adhering to the requirements of this procedure. The RSO will review documentation generated by the use of this procedure.

Radiation Safety Officer Representative (RSOR) – The Radiation Safety Officer Representative (RSOR) shall be responsible for the implementation of this procedure. The RSOR shall ensure that personnel performing the requirements of this procedure are qualified by training and experience and periodically review adherence to the requirements of this procedure.

Radiological Task Supervisor – The Radiological Task Supervisor (RTS) shall be responsible for assisting in the assignment of personnel that will perform the tasks required by this procedure. The RTS is responsible for ensuring that the Radiological Control Technicians (RCTs) implement and use this procedure. The RTS will ensure that personnel under their cognizance observe proper precautions when using this procedure.

Radiological Control Technicians – The RCTs shall be responsible for performing the duties as specified and generating documentation as required under this procedure. The RCTs shall adhere to all other referenced procedures.

5.0 DEFINITIONS AND ABBREVIATIONS

None.

6.0 PROCEDURE DETAILS

6.1 GENERAL

6.1.1 PRECAUTIONS

The following precautions will be used:

- The detector alarm set point will be set not to exceed the manufacturer's setting of 8.5 deviations above background.
- Trucks should adhere to the required pauses and speed indicated in section [REF _Ref110668947 \r \h] of this procedure when passing through the detectors. Failure to carefully follow these requirements will result in invalid or incomplete screenings and will cause the screening to be repeated.

6.1.2 LIMITATIONS

The following limitations will be in place:

- Calibration shall be performed annually, after maintenance is performed if the instrument fails the performance test, or if proper operation is in question. Calibration is to be conducted by the manufacturer per the manufacturer's instruction manual.
- Setup and daily performance tests will be conducted in accordance with the operating manual for the Ludlum Model 3500-1000 portal monitor. Only one performance test need be performed per day if the monitor will be turned on and off throughout the day.

6.2 PORTAL MONITORING SCREENING

NOTE: The system continuously monitors radiation when the portal is occupied and compares the readings to the alarm level determined by using an average of the background levels. If the alarm threshold is breached, the audible and visual alarms will be activated.

When using the Ludlum Model 3500-1000RMW for gamma screening surveys of heavy equipment and trucks loaded with soils and/or debris, an RCT trained in the operation of the Model 3500-1000RMW will be present to monitor the instrumentation; this training will be documented and performed on a quarterly basis. The RCT's training on portal monitor must be officially documented and said documentation shall be verified by the RTS before assigning an individual to operate the portal monitor.

The following steps will be used for portal monitor screening:

1. Turn the instrument to the "on" position if not already on.
2. Ensure that the green lights on the "Power OK" and "System On" are illuminated. If both lights are not illuminated, contact the RTS. Trucks cannot be screened until both lights are illuminated.
3. Record the date, time, type of material or equipment, material location (origin of material if outgoing) and license plate of the vehicle on the Truck Survey Log (Attachment 1).
4. Have the truck advance towards the detector slowly until the occupancy sensor is tripped.
5. When the occupancy sensor is activated, the RCT will have the driver pause for a period of 10 seconds to allow the instrument to begin a measurement cycle.
6. Inform the truck driver to proceed slowly through the detectors. The rate of travel should be as slow as possible (not to exceed 3 miles per hour). If the truck is traveling too fast, a red over speed light will illuminate on the instrument panel.
7. If the over speed light illuminates, request that the truck driver proceed forward and turn around to restart the screening process. Wait for the instrument to be manually reset before proceeding.
8. While the truck is passing through the detectors, a green "checking" light will illuminate to tell the operator that the infrared motion detectors are operating properly. When the truck completes its pass (indicated by the checking light going off), it is necessary for the driver to pause the truck until cleared by the RCT to proceed or return for a rescreen. If the checking light repeatedly does not illuminate while a truck is passing through, have the truck stop in a convenient location nearby. The location should be selected in accordance with the requirements of HPO-Tt-026, *Gamma Screening of Trucks Using Portable Survey*

Gamma Screening of Trucks Using the Stationary Portal Monitor

Instrumentation. Notify the RTS that the unit is not operational. At this point, the load contents have not been released and the portal will have to be repaired and the truck re-scanned or a hand survey conducted. If a hand survey is to be used, proceed to Step 1 of Section 6.3 below.

9. If the checking light illuminates and the red alarm light does not illuminate when the truck has completed a pass, record the results (clean) under the Pass 1 column on Attachment 1 and proceed to Step 6.
10. In the event that the red alarm light illuminates, let the truck continue through the detectors and record results (alarm) under the Pass 1 column on Attachment 1 and continue at Step 1.
11. Inform the truck driver that it will be necessary to pass through the detectors again to confirm the alarm. Direct the truck driver to reposition the truck for another pass through the detector.
12. Push the reset button (if necessary). If the checking light illuminates and the red alarm light illuminates, let the truck continue through the detectors and record results (alarm) under the Pass 2 column on Attachment 1 and proceed to Step 5. In the event that the red alarm light does not illuminate, let the truck continue through the detectors and record results (clean) under the Pass 2 column on Attachment 1 and continue at Step 3.
13. Inform the truck driver that it will be necessary to pass through the detectors again to confirm the alarm. Direct the truck driver to reposition the truck for another pass through the detector.
14. Push the reset button (if necessary). If the checking light illuminates and the red alarm light does not illuminate when the truck passes through, record the results (clean) under the Pass 3 column on Attachment 1 and proceed to Step 16. In the event that the red alarm light illuminates, let the truck continue through the detectors and record results (alarm) under the Pass 3 column on Attachment 1 and continue at Step 5.
15. Inform the truck driver that an alarm has been confirmed and additional surveys will be performed. Proceed to Section 6.4 below. Indicate "Ret." under the Disposition header of the Truck Survey Log to indicate the load has been returned and initial the appropriate line on the Truck Survey Log. Have the truck driver initial the log as well. Subsequent truck surveys can now be conducted beginning at Step 1 above.
16. The truck can be released. Indicate "Rel." under the Disposition heading on the Truck Survey Log and sign next to the appropriate row. Have the truck driver initial the log as well. Subsequent truck surveys can now be conducted beginning at Step 1 above.

Gamma Screening of Trucks Using the Stationary Portal Monitor**6.3 HAND SCREENING**

In instances where the portal monitor alarms while a truck is being surveyed, a hand survey will be required. Hand surveys will be conducted in accordance with the requirements in HPO-Tt-026, *Gamma Screening of Trucks Using Portable Instrumentation*. The following steps will be performed for a hand survey:

1. Indicate that a hand survey is required on the Truck Survey Log.
2. Perform a hand survey per the requirements of HPO-Tt-026.
3. File any associated hand survey forms in the project files.
4. Indicate that the hand survey has been completed on the Truck Survey Log.
5. Document the disposition on the Truck Survey Log.
6. Initial the appropriate line on the log and obtain initials from the driver as well.

6.4 DISPOSITION OF PORTAL MONITOR ALARMS

There are several additional steps to follow based on the varying circumstances in the cause of a portal monitor alarm. The following sections provide the detailed steps for each of the following situations:

- If the portal monitor alarm is due to a truck hauling soils or debris off-site from areas at HPS, proceed to Section 6.5,
- If the portal monitor alarm is due to a piece of incoming or outgoing heavy equipment, proceed to Section 6.6,
- If the portal monitor alarm is due to a truck hauling soils or debris on-site, proceed to Section 6.7, and
- For all other portal monitor alarms, notify the RSOR for disposition.

NOTE: In some situations, it may be necessary to develop additional work planning documents (i.e., Work Instructions and SOPs) to disposition a truck that has not cleared the portal monitor.

6.5 PROTOCOL FOR TRUCKS LEAVING HPNS FAILING THE PORTAL MONITOR CLEARANCE

When a truck hauling soils and debris off-site from non-radiologically impacted sites causes two portal monitor alarms in two out of three passes, the truck will not be released. The RSOR shall be contacted immediately and apprised of the situation. The following steps shall be taken in response to a truck that does not receive portal monitor clearance.

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1. Copies of the portal monitor output for all passes resulting in an alarm shall be retained by the operators for inclusion with the truck survey log.
2. The offending truck, with load in place, shall initially be subjected to a hand survey per procedure HPO-Tt-026.

6.6 PROTOCOL FOR INCOMING HEAVY EQUIPMENT FAILING THE PORTAL MONITOR CLEARANCE

Any heavy equipment that will be used in a non-radiologically impacted site will have to obtain clearance through the portal monitor when the equipment first comes on-site and again when it leaves the site. The RSO shall be contacted immediately and apprised of any confirmed alarms.

1. Copies of the portal monitor output for all passes resulting in an alarm shall be retained by the portal monitor operators for inclusion with the daily truck log given to the RSO.
2. If the piece of heavy equipment alarms the portal monitor during an incoming survey, the responsible party of the heavy equipment will be instructed that the equipment has not cleared the portal monitor and will not be allowed to be used at HPS.
3. If a piece of heavy equipment alarms the portal monitor during an outgoing survey, the responsible party of the heavy equipment will be instructed that a more detailed survey will have to be performed.
4. Instruct the heavy equipment operator/transporter to move the equipment to a low background non-radiologically impacted area. Perform a hand survey per the requirements of HPO-Tt-006, *Radiation and Contamination Surveys*.
5. If, while performing the contamination survey, elevated measurements are observed, immediately notify the RSO or designee and instruct the driver that the equipment will not be allowed on site.
6. If no contamination is found, fill out the appropriate release form per SOP HPO-Tt-012 and provide it to the RSO for review and subsequent approval for release.

6.7 PROTOCOL FOR INCOMING TRUCKS FAILING THE PORTAL MONITOR CLEARANCE

When an incoming truck fails screening per Section 6.2, the truck will have to undergo a hand survey per Section 6.3. The RSO shall be contacted immediately and apprised of the situation. The following steps shall be taken in response to an incoming truck that does not receive portal monitor clearance.

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1. Copies of the portal monitor output for all passes resulting in an alarm shall be retained by the portal monitor operators for inclusion with the truck survey log provided to the RSO.
2. The offending truck, with load in place, shall initially be subjected to a hand survey per procedure HPO-Tt-026. A hand survey log shall be completed and also appended to the truck survey log. The purpose of the hand survey is to identify if elevated areas of radiation exist that may indicate the presence of radioactive material. Particular attention should be given to the area of the truck that caused the alarm according to the portal monitor (i.e. Alarm in back).

NOTE: If a hand survey does locate an area of elevated activity, immediate notification should be given to the RSO who will inform RASO.

3. Rejected truck loads that do not exhibit elevated levels of radiation during the hand survey can be dumped in an area designated by the RSO or designee.
4. If elevated areas of radiation are identified, then the truckload will be placed within a posted Radiologically Controlled Area in such a manner as to prevent spread of potential radiological contamination into adjacent areas, pending survey, sampling and/or disposition instructions from RASO.

7.0 RECORDS

A Truck Survey Log, provided as Attachment 1, will be generated and retained in the permanent project file as a result of using this procedure. Multiple entries can be made on the same survey form for trucks that do not set off the alarm on the detector.

If a hand survey is performed, a separate survey form will be used in accordance with the hand survey procedures in HPO-Tt-026.

8.0 REFERENCES

<i>Number</i>	<i>Title</i>
HPO-Tt-026	<i>Gamma Screening of Trucks Using Portable Survey Instrumentation</i>
HPO-Tt-006	<i>Radiation and Contamination Surveys</i>
HPO-Tt-012	<i>Release of Materials and Equipment from Radiologically Controlled Areas</i>
N/A	<i>Base-wide Radiological Management Plan</i>

9.0 ATTACHMENTS

The following form is attached to this procedure:

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Attachment 1, Truck Survey Log

TRUCK SURVEY LOG

^a Pass 2 and 3 not necessary if Pass 1 is clean
^b Pass 3 not necessary if Pass 1 and Pass 2 are both alarm
^c Indicate if hand survey required, if so initial upon completion
^d Indicate release or return